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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yutaka Matsuoka

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10/15/2008

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EXAMINER

KASHNIKOW, ERIK

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/524,680	<b>Applicant(s)</b> MATSUOKA ET AL.	
	<b>Examiner</b> ERIK KASHNIKOW	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 13 recites the limitation "the cleaved inorganic layer compound" in the last two lines. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-3, 6-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaya et al. (US 5,942,298) in view of Gregorich et al. (Can. J Soil Sci **68**: 395-403).
5. In regards to claims 1 and 7 Sakaya et al. teach films contain inorganic layered compositions (column 1 lines 64-67), and specifically mentions clay as the layered inorganic material (column 23 line 56). Sakaya et al. also teach the composition also comprises a resin (column 4 lines 31-32) of which polyvinyl alcohols and ethylene vinyl alcohols are preferred embodiments (column 4 lines 56-58).
6. In regards to claim 2 and 13 Sakaya et al. teach the use of a high speed stirrer disperser (column 3 lines 39-42).

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7. In regards to claim 6 Sakaya et al. further teach that the concentration of the inorganic layer compound and the resin is 4-15 wt % (column 5 lines 37-39). Examiner is aware that the reference states organic layer compound at the lines cited, however continued references are made to inorganic layered compounds throughout the reference and not to organic layered compounds and therefore it is Examiners opinion that this is a spelling error in the reference. Sakaya et al. further teaches that the mass ratio of the inorganic layered compound and the gas barrier resin is approximately 4-90% which encompasses applicants range (claim 10).

8. In regards to claim 8 Sakaya teach that the base material of their invention can be used including polyolefins and polyesters (column 8 lines 1-8). Sakaya et al. teach a coating thickness of 10 to less than 1 $\mu$ m (column 7 lines 26-27), which is within Applicant's range.

9. In regards to claims 9 and 10 Sakaya teach thicknesses above and below applicants defined thickness (sheets  $\geq$  25 $\mu$ m > films) for films and sheets (column 8 lines 32-33). Sakaya et al. also teach that it is well known in the art at the time of the invention to make packages for food items (column 1 lines 13-61).

10. In regards to claim 11 Sakaya et al. are silent regarding bottles however they do teach containers for carbonated drinks, and the most common container for carbonated drinks and an obvious variant of "container for carbonated drinks" is a bottle (column 1 line 36).

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11. While Sakaya et al. teach the containers made from a dispersed layered inorganic compound composition, they are silent regarding the use of hydrogen peroxide in the dispersion process.

12. As stated above Gregorich et al. teach dispersion of an inorganic layered composition, in this case clay and soil is dispersed using hydrogen peroxide in a dispersion medium (page 397 first column).

13. In regards to claims 2 and 13 Gregorich et al. teach an almost 1/1 ratio of inorganic layer and hydrogen peroxide (using density of hydrogen peroxide and page 396 second column to 397 first column of Gregorich et al. to obtain this result). While Gregorich et al. teach that the hydrogen peroxide method is inferior, they do mention that "[t]he hydrogen peroxide is effective however, in disrupting silt sized aggregates which caused most of the increases in the clay sized materials with increased ultrasonic energy". This would give one of ordinary skill in the art at the time of the invention motivation to combine clay and hydrogen peroxide with a more effective stirring or shaking device such as a high speed stirrer or an ultrasonic dispersion device in order to prevent the formation of aggregates.

14. Given that Sakaya et al. in view of Gregorich et al. disclose process as presently claimed including mixing peroxide and inorganic layered compound in dispersion medium which is then treated in high speed stirrer, it is clear that the process would intrinsically distribute cleaved inorganic layered compound as presently claimed.

15. One of ordinary skill in the art at the time of the invention would be motivated to combine the dispersion process of Gregorich et al. with the invention of Sakaya et al.

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because the films which have gas barrier properties against oxygen and organic solvent vapors and offer good resistance to scratches on the base of the film of Sakaya et al. are formed from a dispersion process that would benefit from the complete dispersion with no evidence of redistribution or the formation of aggregates of the dispersion process of Gregorich et al. (page 395 top of page).

16. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaya et al. (US 5,942,298) in view of Gregorich et al. (Can. J Soil Sci **68**: 395-403) in further view of Uchida et al (US 6,569,533).

17. As stated above Gregorich et al. and Sakaya et al. teach a film which includes an inorganic layer dispersion. However they are silent regarding paper as a base layer.

18. Uchida et al. teach a polyurethane resin with excellent gas barrier properties (column 2 lines 28-35).

19. In regards to claim 12 Uchida et al. teach a gas barrier composite film comprising a base film layer formed with at least one member selected from the group consisting of a plastic, a paper, a fabric, a metal and a ceramic, an inorganic layer and a resin layer formed from an aqueous dispersion wherein the inorganic layer is formed on the base layer, and further the resin layer is formed on the inorganic layer (claim 10).

20. Examiner notes that Sakaya et al. teach away from using products that are not transparent, however if one did not need the film to be transparent Uchida et al. teach that paper could be used as the base of the film, and that it is known in the art to use paper as the bases for films.

21. One of ordinary skill in the art at the time of the invention would be motivated to modify the inventions of Gregorich et al. and Sakaya et al. with that of Uchida et al. because the gas barrier films of Gregorich et al. and Sakaya et al. could benefit from the barrier properties of Uchida et al against water vapor and aromatics (column 1 lines 5-10).

### ***Response to Arguments***

22. Applicant's arguments, see arguments, filed 06/24/2008, with respect to the objection of the specification and the claims, have been fully considered and are persuasive. The objections of the specification and claims have been withdrawn.

23. Applicant's arguments, see arguments, filed 06/24/2008, with respect to the 35 U.S.C. 102 and 112 2<sup>nd</sup> paragraph have been fully considered and are persuasive. The rejections of the claims based on 35 U.S.C. 102 and 112 2<sup>nd</sup> paragraph have been withdrawn.

24. In response to Applicant's arguments regarding the Gregorich et al. reference Examiner notes that while Gregorich et al. do not disclose all the features of the present claimed invention, Gregorich et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present

claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

25. In regards to Applicant's arguments concerning the motivation to use the Gregorich et al. reference Examiner points out that the Gregorich et al. reference is used solely to teach that it is known in the art to use hydrogen peroxide in dispersions of inorganic compounds. Examiner also points out that Gregorich et al. are used for materials such as clays minerals which Applicant's list as a material of interest in the specification (paragraph 0014 of instant specification). Applicants' are reminded that according to MPEP 2141.01 (a), a reference may be relied on as a basis for rejection of an applicants' invention if it is "reasonably pertinent to the particular problem with which the inventor is concerned." A reasonably pertinent reference is further described as one which "even though it maybe in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." Gregorich et al. is, therefore, a reasonably pertinent reference, because it teaches using hydrogen peroxide to disperse inorganic compounds, which is a function especially pertinent to the invention at hand.

26. In regards to Applicant's arguments that Gregorich et al. does not teach using the inorganic layered compound and peroxide for obtaining effects of the present invention, it is noted that "obviousness under 103 is not negated because the motivation to arrive at the claimed invention as disclosed by the prior art does not agree with appellant's motivation", *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1966).



27. Examiner notes that applicants point to the data set forth in the present specification which compares gas barrier coating composition within the scope of the present claims, i.e. comprising dispersion comprising montmorillonite and peroxide, with gas barrier coating composition outside the scope of the present claims, i.e. comprising dispersion with montmorillonite and no peroxide. It is shown that the present invention is superior in terms of oxygen transmission rate. However, the data is not persuasive given that the data is not commensurate in scope with the scope of the present claims given that while the present claims are drawn to inorganic layered compound, all the examples only utilize montmorillonite clay. Given that the data is limited to examples utilizing one specific type of inorganic layered compound, i.e. montmorillonite, while the present claims are broadly drawn to inorganic layered compound, the data is not commensurate in scope with the scope of the claims, See MPEP 716.02(d).

28. In regards to applicants arguments regarding the Uchida reference Examiner notes that while Uchida et al. do not disclose all the features of the present claimed invention, Uchida et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erik Kashnikow  
Examiner  
Art Unit 1794

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1794